

WHAT IS CLAIMED IS:

1 1. A method for servicing interrupts generated by a plurality of co-
2 processors included in a multiprocessor subsystem, the method comprising the acts of:
3 in response to a detected interrupt, determining whether the detected interrupt
4 was generated by one of the plurality of co-processors of the multiprocessor subsystem; and
5 in the event that the detected interrupt was generated by one of the plurality of
6 co-processors, scheduling execution of a deferred servicing procedure,
7 wherein during execution the deferred servicing procedure services a plurality
8 of pending interrupts generated by one or more of the plurality of co-processors, including
9 the detected interrupt.

1 2. The method of claim 1, wherein during execution the deferred
2 servicing procedure services all pending interrupts from all of the plurality of processors.

1 3. The method of claim 1, wherein the plurality of pending interrupts
2 serviced by the deferred servicing procedure includes a second interrupt generated by the one
3 of the plurality of processors that generated the detected interrupt.

1 4. The method of claim 1, wherein the plurality of pending interrupts
2 serviced by the deferred servicing procedure includes a second interrupt generated by one of
3 the plurality of processors other than the one that generated the detected interrupt.

1 5. The method of claim 1, wherein the act of determining whether the
2 detected interrupt was generated by one of the plurality of co-processors includes the acts of:
3 selecting one of the plurality of co-processors as a current co-processor; and
4 reading a value stored in an interrupt register of the current co-processor.

1 6. The method of claim 5, wherein in the event that the value stored in the
2 interrupt register does not indicate an interrupt, a different one of the co-processors is
3 selected and the act of reading is repeated.

1 7. The method of claim 5, wherein the act of reading includes:
2 updating a private register mapping to enable access to the interrupt register of
3 the current co-processor,
4 wherein the private mapping is not used by the deferred servicing procedure.

1 8. The method of claim 1, further comprising the act of disabling further
2 interrupts from the plurality of co-processors in the event that the detected interrupt was
3 generated by one of the plurality of co-processors,
4 wherein during execution the deferred servicing procedure re-enables
5 interrupts from the plurality of co-processors.

1 9. The method of claim 8, wherein the act of disabling further interrupts
2 is performed at a critical priority level.

1 10. The method of claim 1, wherein the act of determining whether the
2 detected interrupt was generated by one of the plurality of co-processors is performed at a
3 critical priority level.

1 11. The method of claim 10, wherein the act of scheduling execution of the
2 deferred servicing procedure is performed at the critical priority level.

1 12. The method of claim 11, wherein the act of scheduling execution of the
2 deferred servicing procedure includes setting a second priority level for the deferred servicing
3 procedure, wherein the second priority level is lower than the critical priority level.

1 13. The method of claim 1, wherein the multiprocessor subsystem is a
2 graphics processing subsystem.

1 14. A computer system comprising: ✓
2 a multiprocessor subsystem including a plurality of co-processors for
3 processing data, wherein each of the co-processors is configured to generate interrupts; and
4 a driver module configured to control operation of the multiprocessor
5 subsystem, the driver module including:
6 a schedulable servicing module configured to detect and service all
7 pending interrupts from all of the co-processors when activated; and
8 an interrupt detection module configured to schedule the servicing
9 module for activation in the event of an interrupt from any one of the plurality
10 of co-processors.

1 15. The system of claim 14, wherein the interrupt detection module is
2 further configured to be activated by a central processing unit of the computer system in
3 response to an interrupt signal.

1 16. The system of claim 14, wherein the interrupt detection module is
2 further configured to disable further interrupts from all of the co-processors in the event of an
3 interrupt from any one of the co-processors, and wherein the servicing module is further
4 configured to re-enable further interrupts from all of the co-processors.

1 17. The system of claim 14, wherein the interrupt detection module is
2 further configured to operate at a critical priority level and the servicing module is further
3 configured to operate at a second priority level lower than the critical priority level.

1 18. The system of claim 14, wherein the multiprocessor subsystem is
2 configured for graphics processing.

1 19. The system of claim 14, wherein each of the plurality of co-processors
2 includes an interrupt register configured to indicate an interrupt, and wherein the interrupt
3 detection module is further configured to determine whether one of the plurality of co-
4 processors generated an interrupt by accessing the respective interrupt registers of the co-
5 processors.

1 20. The method of claim 19, wherein the interrupt detection module is
2 further configured to maintain a private mapping for accessing the respective interrupt
3 registers, the private mapping being used exclusively by the interrupt detection module.

1 21. A computer program product comprising:
2 a computer readable medium encoded with program code^m, the program code
3 including:

4 program code for determining, in response to a detected interrupt,
5 whether the detected interrupt was generated by one of the plurality of co-
6 processors of the multiprocessor subsystem;

7 program code for scheduling a deferred servicing procedure in the
8 event that the detected interrupt was generated by one of the plurality of co-
9 processors; and

10 program code for performing the deferred servicing procedure,
11 wherein the program code for performing the deferred servicing procedure
12 includes program code for servicing a plurality of pending interrupts from one
13 or more of the plurality of processors, including the detected interrupt.